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ABSTRACT

The purpose of this research was to conduct a preliminary analysis of a new instrument designed to measure the psychological environment of the classroom. The instrument, the Classroom Environment Index (CEI), has been developed in an initial form. The structure was essentially the same as the other Syracuse Indexes (College Characteristics Index, High School Characteristics Index, etc.). It was based on Murray's Needs-Press model and contained 30 scales of 10 items each, totaling 300 items. The expectations of the present study was that the scales of the CEI would exhibit adequate discriminates among different classroom environments. Three forms of the CEI were administered to different samples. The following findings were reported: (1) The item discrimination indexes for the first two forms were adequate but somewhat lower than other Syracuse Indexes, while the discrimination indexes for the third form were considerably improved; (2) the reliability co-efficents were low in the first two forms, but considerably higher for the third form; (3) finally, it was found that the CEI scales differentiated between classrooms, subjects, grades, levels, and to some degree sexes. (Author/RK)

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THE MEASUREMENT OF CLASSROOM ENVIRONMENT

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SUMMARY

Purpose

The purpose of this research was to conduct a preliminary analysis of a new instrument designed to measure the psychological environment of the classroom. The instrument, the Classroom Environment Index (CEI), had been developed in an initial form. The structure was essentially the same as the other Syracuse Indexes (College Characteristics Index, High School Characteristics Index, etc.). It was based on Murray's Needs-Press model and contained 30 scales of 10 items each, totaling 300 items. The expectations of the present study were that the scales of the CEI would exhibit adequate homogeneity and reliability and that the CEI would discriminate among different classroom environments.

Method

Three forms of the CEI were administered to different samples. The first form, 1069, was administered to 553 students in 27 different classrooms. A second form, 570, was administered to 179 students in eight classrooms. These first two forms differed in that each scale contained approximately five items that were different on each form. Item discrimination indexes for each scale were obtained using the procedures developed by Ebel. Kuder-Richardson Formula 20 was employed to obtain reliability coefficients. One-way analyses of variance between sexes, grades, subjects, and classrooms were conducted.

Using the data obtained from the initial analyses, a third form, 1170, was constructed and analyzed. Suggestions for rewording certain items were obtained from reviewers in Canada, Australia, and New Zealand, so that the CEI might be used in other English-speaking countries. Data from 31 classrooms were used. In addition to the analysis described above, interaction effects were examined.

Findings

The item discrimination indexes for the first two forms were adequate but somewhat lower than other Syracuse Indexes. The discrimination indexes for the third form were considerably improved.

The reliability coefficients of the first two forms were disappointing, averaging more than .10 less than other Syracuse Indexes. However, reliabilities were considerably higher for the third form, comparing favorably with other Indexes. Two of the scales were consistently low in all three forms.

The results of analysis of variance indicated that, in general, the CEI scales differentiated between classrooms, subjects, grades, levels, and to a much lesser extent, sexes. No significant confounding of variables was found.

Conclusions and Recommendations

In general, the expectations of the study were met. The third form of the CEI, 1170, exhibited adequate homogeneity and reliability. Analysis of variance indicated that most scales differentiated between classrooms, subjects, grades, and levels. There seemed to no consistent interaction of variables. Although the third form of the CEI would appear to be adequate in most respects, a fourth revision, CEI 971, was constructed in which the weakest items of Form 1170 were replaced by stronger items from the two earlier forms. This fourth revision will be available for research purposes late in 1971.

Future studies include plans for further refinement of the instrument, confirmation of its homogeneity and reliability, factor analysis, and examination of relationships between classroom environment and such variables as creativity and student achievement.

CHAPTER I

Introduction

Objectives

The purpose of this research was to analyze and refine an instrument designed to measure the psychological environment of the classroom. In a previous study, the investigator used a number of instruments to examine creativity in differing high school climates (Walker, 1964). One of the instruments used was a measure of the psychological environment of the high school, called the High School Characteristics Index (Stern, 1960a & b). The study described differences in the environment of creative schools as compared with more traditional schools. An interesting by-product of the study was the observation that even in schools judged not to be the type that fostered the development of creativity, there were a number of highly creative teachers.

In studying creativity in school settings, the need became apparent for a measurement of the characteristics of specific classrooms. A problem in studying creativity in secondary education is the extremely small number of high schools that have distinctive characteristics usually associated with creativity. The typical American high school as a total institution does not have creativity characteristics. Factor analyses of the High School Characteristics Index indicate clearly that there are some exceptional high schools akin to the more outstanding colleges, but these are rare (Stern, 1970).

Yet within the typical school, individual classrooms seem likely to vary greatly with regard to creative teaching and creative learning. Thus it would seem that a measure of individual classroom environmental characteristics would prove to be a valuable tool in studying creativity and other aspects of student achievement. The present research was viewed as a first study in a series designed to refine an instrument to be used in examining relationships among such variables as classroom environment, teacher personality, teaching style, creativity, and other facets of the teaching-learning process.

Related Literature

This research was closely related to other studies of psychological environment, or environmental press. One of the first studies of this type was the development of a measure of the psychological characteristics of college environments (Pace and Stern, 1958). An instrument, the College Characteristics Index, was developed and analyzed. It was based on earlier work by Stern, Stein, and Bloom (1956) who had begun the process of operationalizing Murray's (1938)

concepts of need and press in objective test format. Murray used the term "press" for external pressures as perceived by the person and the term "need" for enduring intentions or internal states. A person's needs are inferred from the kinds of activities in which he engages. The press is inferred from the activities that he reports as going on around him. Stern has generalized consensually validated press reports as reflecting the commonly experienced "real" environment.

The College Characteristics Index consists of 30 scales, each corresponding to a particular aspect of the environment. Appendix A includes a definition of each of the scales. The 12th scale, for example, measures Emotionality. The person being tested indicates his agreement or disagreement with such statements as "Students here learn that they are not only expected to develop ideals but also to express them in action." "Most students get extremely tense during exam periods," and "The way people feel around here is always pretty evident."

Stern and his colleagues developed five such Indexes, the original prototype form for the others which measures needs (Activities Index), and four which measure various types of institutional press (College Characteristics Index, High School Characteristics Index, Evening College Characteristics Index, and the more generalized Organizational Climate Index). A comprehensive presentation of the research these instruments have generated may be found in Stern (1970).

Most studies of classrooms have been through the use of classroom observation instruments, such as those developed by Anderson (1939), Withall (1949), Medley and Mitzel (1958), and Amidon and Flanders (1960). Stern, Masling, Denton, Henderson, and Levin (1960) developed scales for measuring motivation for elementary and secondary school teaching, reflecting individual differences in approach to instruction. Related studies were conducted by Masling and Stern (1963, 1969).

Astin (1965) has studied classroom environment at the college level using student perceptions of a limited number of characteristics of the classroom environment, together with such items as size of class, age of instructor, hour class meets, etc. Deshpande, Webb, and Marks (1970) have explored student perceptions of college instructor behavior, together with the evaluation of instruction, making use of the Teacher Description Instrument (TDI). This instrument yielded fourteen first-order factors and four second-order factors which were correlated with criterion variables relating to instruction. Hall (1970) applied Pervin's concept of person-environment fit to learning in college classes. Teacher style was measured with thirty-five items describing a typical range of teacher behavior; the instrument yielded seven factors. Fourteen a priori classroom dimensions have been measured in high school physics classes with seven-item scales devised by Anderson, Walberg and Welch (1969); their measure of the characteristics of the class was the Learning Environment Inventory.

The present study focused on the classroom situation as do the studies described above, but employed the systematic and established structure of the Syracuse Indexes to accomplish this end. This research traces its origins to the work of such men as Kurt Lewin, H. A. Murray, and G. G. Stern.

CHAPTER II

Procedures

Classroom Environment Index

The instrument, the Classroom Environment Index (CEI), was developed in an initial form, using the same structure as the other Syracuse Indexes (30 scales, 10 items each, for a total of 300 items). The content of each scale item was kept as similar as possible to those of the other environment Indexes, but was revised to be applicable to the classrooms. The High School Characteristics Index (HSCI) was most similar to the proposed CEI, but items from the College Characteristics Index (CCI) and other Indexes were studied for possible adaptations to the classroom setting. In addition, Murray's (1938) original variables were reexamined for additional sources of Index items.

Several examples can illustrate how the existing Indexes were adapted for use in the CEI. For example, scale 2 (Achievement) represents environmental characteristics relating to striving for success through personal effort. Item 2 on the HSCI reads, "There is a lot of competition for grades." This item could be reproduced in essentially the same fashion in the CEI, since it would apply equally well to classroom situations as it does to an entire school. Other items in the scale needed to be changed only slightly to adapt to the classroom rather than the total school situation. The item "Students generally manage to pass even if they don't work hard during the school year" was changed to "In this course students usually manage to get passing grades even if they don't work too hard."

Other scales were more difficult to adapt from the total institutional climate to the classroom climate, especially items in such scales as Humanism, Play, Science, and Exhibitionism. On the Exhibitionism scale, for example, the item, "Competition is keen for parts in student plays," would be appropriate only for a small number of classrooms, so a new item was created to take its place. Other items were adapted: "School activities are given a lot of space in the local newspaper," became "Classroom activities are often reported in the school newspaper."

Three forms of the CEI were used in the present study. In the first two forms, 1069 and 570, each scale contained approximately five items that were the same in both forms and five additional items that were different, giving a total of approximately fifteen different items per scale for the two forms.

The third form, 1170, was constructed using the best items of the first two forms, and adding a few additional new items. In addition, Form 1170 was reviewed by researchers in Canada, Australia, and New Zealand in an attempt to eliminate problems in semantics and

vocabulary that would interfere with the administration of the instrument in other English-speaking countries. To the extent possible, the suggestions of the foreign observers were incorporated into Form 1170. This form is reproduced in Appendix B.

An additional change was made in Form 1170. In Forms 1069 and 570, every 30th item contributed to a particular scale. The Abasement scale, for example, consisted of items 1, 31, 61, 91, etc. Early difficulties in administering the instrument within a typical classroom time period had suggested that a shorter form would be more feasible. To achieve this end and still maintain the essential structure of the Index, Form 1170 was split into two sub-forms (1170-1 and 1170-151). Form 1170-1 included the first fifteen scales; 1170-151 included the scales 16 to 30. Every fifteenth item, instead of every 30th item, now contributed to a particular scale. For example, in the Abasement scale, items 1, 16, 31, etc. relate to abasement.

The splitting of Form 1170 had several advantages. In was easily possible to administer one sub-form in the typical classroom period. By having half the class complete each sub-form, all scales could be obtained for a classroom. If time permitted, it was still possible to have all students complete both sub-forms, so that complete information was obtained from every classroom. Sometimes it was useful to use two classroom periods instead of one, especially at the lower grade levels, to obtain complete information from students.

Sample

Different samples were used for each of the three forms of the CEI. The specific classrooms for each form are listed in Appendix D.

The first form, 1069, was administered to 553 students in 27 different classrooms. Most of the classrooms were from an enlarged village school district with a student population of approximately 2,500. In addition, several college classrooms were included from a small private nondenominational coeducational college in New York State.

The second form, 570, was administered to 179 students in eight classrooms from two Upstate New York public school enlarged village districts of approximately 2,500 pupils each.

There were several differences in the way the first form was administered as compared with the second form. For most classrooms, the first form was administered by members of the research team; no classroom teachers were involved. In addition, the form was not administered in the regular classroom situation. For the most part this first form of the CEI was administered in large study halls and large instructional areas. Because of the many difficulties involved in these procedures, it was decided to make some changes in the second administration. Therefore, the second form was administered by the individual classroom teacher in his own classroom to his own students.

This seemed to be a much better procedure and involved fewer difficulties.

An additional problem encountered in small schools was that several students were in the situation where they took the CEI for more than one of their classrooms. This seemed to work a hardship on those few students who were caught in this situation.

The third form, 1170, was administered to students in over 40 classrooms. Only 31 classrooms were included in the analysis because of the small number of cases in several situations; all classrooms were eliminated where there were not at least ten cases of each of the sub-forms, for a total of 20 cases. In the 31 classrooms included in the analysis, 477 cases were available for form 1170-1 and 462 cases were available for form 1170-151.

A wider variety of classrooms and administrative procedures were used with Form 1170. In most instances, the regular classroom teacher administered the instrument or at least assisted in its administration. The classrooms were from a variety of schools, including a large Mid-Western city school district, a suburban New England school district, and classrooms from two large universities. The fact that Form 1170 could be completed within a typical classroom period greatly facilitated its administration.

Analysis of the Data

The tests were scored by means of the Optical Scanning Corporation equipment at the Psychological Research Center at Syracuse University. Special answer sheets for the Environment Indexes, designed for the 300 items, were employed. On the special answer sheet, an 11-digit code was used to identify the specific classroom, subject, school, grade, sex, and form of the CEI (Appendix E). In most cases, the special coding was done by the research team and not by the student. The student merely indicated subject, grade, and sex on the answer sheet. Until the coding was completed, it was necessary to keep each set of answer sheets for a particular classroom in a separate folder which identified the specific classroom and school.

Most of the computer programs for data were written by personnel at Syracuse University. Some of the data analysis was done at the Alfred University Computer Center.

Stern (1970) has stated that since the Index items were constructed in accordance with specifications derived from an entirely theoretical system, the response characteristics of these scales were of more than ordinary interest. "The effectiveness of the Indexes as measuring devices has implications going beyond their pragmatic utility. The properties of these scales constitute an implicit test of the theoretical model that was their source.

"If the items of a given scale prove to be statistically homogeneous, it would be evidence of the fact that they are measures of

the same process. To the extent that the scales are reliable, we shall be able to conclude that each set is a dependable measure of that process. Once this has been established to our satisfaction, we can go on to the next question concerning the nature of this empirically established process and its relationship to the one postulated by theory (p. 22)."

Scale Homogeneity

The contribution of each item to the total scale score provided an estimate of the internal consistency of each scale. Ebel's (1954) procedure for comparing the effectiveness of each item in discriminating between the extreme high and low scoring subject was employed. The formula is as follows:

$$\text{Item Discrimination Index} = \frac{R_u}{N_u} - \frac{R_l}{N_l}$$

R = number of correct responses

N = number of cases

u = cases for the upper 27% of the total distribution of scale scores

l = cases for the lower 27% of the total distribution of scale scores

Stern (1970) believes that the level of acceptability for the discrimination index should be raised from +.20 to +.30 to allow for the small number of items in each scale.

Using the above formula, the discrimination index for each of the 300 items in each form was calculated. In addition, the average discrimination index for each scale was computed.

Scale Reliability

The scale reliabilities for the CEI were established using Kuder-Richardson Formula 20, which has been widely used with other Syracuse Indexes. The formula is as follows:

$$KR_{20} = \frac{n}{n-1} X \frac{\sigma_t^2 - \sum \overline{pq}}{t^2}$$

n = the number of items

σ_t^2 = the score variance of the total scale

p = the proportion of correct answers to an individual item

q = the proportion of incorrect answers (1 - p) to an individual item

pq = the variance of the individual item

$\sum \overline{pq}$ = the average within-class sum of the item variances

Using stringent conditions, Stern found that the practical maximum for KR_{20} on a 10-item scale was between.83 and .91.

Differentiation

Simple one-way analysis of variance between scale means for sex, grade, school level, subject, and classroom was employed to examine the abilities of the scales to differentiate with respect to these variables. The major concern was whether or not the CEI would differentiate among classrooms. Its ability to distinctly indicate differences with regard to sex, grade, school level, and subject matter was also of considerable interest. Homogeneity of variance was examined by means of Bartlett's test.

Two- and three-way analyses of variance were employed with the third form, 1170, to examine possible interactions among variables.

The ability of the scales to differentiate between school levels was only examined with regard to Form 1170. The school levels were: junior high, senior high (grades 9 - 12), and college.

Other Information

Additional information useful in revising test items was also obtained, such as item difficulty, the point biserial correlation coefficient of each item with its scale, mean scores for those students who answered the item "correctly" and for those who answered it "incorrectly," and the item response pattern (an indication of the number and percentage of students in the upper and lower extremes of the total score distribution and in the total group who gave each possible response to the item).

For Forms 1069 and 1170, the proportion of correct answers to individual items was available. In addition to its use in calculating scale reliabilities, these data were utilized in examining item consensus.

CHAPTER III

Findings

For each of the three forms of the CEI, the data were analyzed to yield a discrimination index for each item, the reliability of each scale, and the ability of each scale to differentiate among sexes, grades, subjects, and classrooms. For the third form of the CEI, 1170, additional data were available with regard to the ability of each scale to differentiate between levels (junior high, senior high, college) and with regard to the interaction of variables.

Scale Definitions

A brief definition of each of the scale variables follows. Appendix A provides a more complete definition of each scale (Stern, 1970).

1. ABA Abasement--ASS Assurance: self-depreciation versus self confidence.
2. ACH Achievement: striving for success through personal effort.
3. ADA Adaptability--DFS Defensiveness: acceptance of criticism versus resistance to suggestion.
4. AFF Affiliation: group-centered social orientation.
5. AGG Aggression--BLA Blame Avoidance: hostility versus inhibition.
6. CHA Change--SAM Sameness: flexibility versus routine.
7. CNJ Conjunctivity--DSJ Disjunctivity: planfulness versus disorganization.
8. CTR Counteraction: restriving after failure.
9. DFR Deference--RST Restiveness: respect for authority versus rebelliousness.
10. DOM Dominance--TOL Tolerance: ascendancy versus forbearance.
11. E/A Ego Achievement: striving for power through social action.
12. EMO Emotionality--PLC Placidity: expressiveness versus stolidness.
13. ENY Energy--PAS Passivity: effort versus inertia.
14. EXH Exhibitionism--INF Inferiority Avoidance: attention-seeking versus shyness.
15. F/A Fantasied Achievement: daydreams of extraordinary public-recognition.
16. HAR Harm Avoidance--RSK Risktaking: fearfulness versus thrill-seeking.
17. HUM Humanities, Social Science: interests in the humanities and the social sciences.
18. IMP Impulsiveness--DEL Deliberation: impetuousness versus reflection.
19. NAR Narcissism: vanity.
20. NUR Nurturance: helping others.
21. OBJ Objectivity--PRO Projectivity: objective detachment versus suspicion.

22. ORD Order--DSO Disorder: compulsive organization of details versus carelessness.
23. PLY Play--WRK Work: pleasure seeking versus purposefulness.
24. PRA Practicalness--IPR Impracticalness: interest in practical activity versus indifference to tangible personal gain.
25. REF Reflectiveness: introspective contemplation.
26. SCI Science: interests in the natural sciences.
27. SEN Sensuality--PUR Puritanism: interest in sensory and aesthetic experiences versus austerity or self-denial.
28. SEX Sexuality--PRU Prudishness: heterosexual interests versus asceticism.
29. SUP Supplication--AUT Autonomy: dependency versus self- reliance.
30. UND Understanding: intellectuality.

Group Means and Standard Deviations

The means and standard deviations of each of the three forms are summarized in Table 1. The trend seemed to be that these values were somewhat lower than those of the other Syracuse Indexes, although not markedly so.

Some of the low means are easily accounted for. Scale 26 (Science), for example, would be expected to be low in non-science classrooms, since it relates indirectly to science course content and teaching procedures. Other scales with low means were 1 (Abasement) and 5 (Aggression). The analyses of variance reported below reveal a number of instances where there is a consistent progression of mean upwards (or downwards) as a function of grade.

The scale with the consistently highest mean was scale 21 (Objectivity), being above 7.00 for each form. Another scale that tended to be somewhat high was 7 (Conjunctivity).

With regard to the variance, it is noted that the lowest values were scale 12 (Emotionality) and scale 15 (Fantasied Achievement). For Form 1170, the variances for these two scales were 2.72 and 1.92, respectively. These variances were consistently low for all three forms of the CEI and undoubtedly contributed to the lower reliability values of these scales.

In their early study Pace and Stern (1958) found that the median of the mean scores for their sample was approximately 5.5 on the College Characteristics Index. The median of their standard deviations was approximately 1.7. They reasoned that an institution exhibited a distinctive press where the mean score fell in the upper or lower one-fourth of the total distribution. In other words, mean scores of 6.6 or higher and mean scores of 4.4 or lower would be suggestive of a press. In the present study the median mean score of the ninety means for the three forms was 5.05. The median of the standard deviations was

TABLE 1. Means and Standard Deviations of Three Forms of the CEI.

Scale	Form 1069[1]		Form 570[2]		Form 1170[3]	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1. ABA	2.80	2.02	4.09	2.54	2.52	2.10
2. ACH	5.38	1.74	5.66	1.72	5.96	2.28
3. ADA	3.39	1.65	6.10	1.88	4.70	1.89
4. AFF	4.99	1.97	5.80	2.07	6.92	1.96
5. AGG	2.89	2.01	3.78	2.02	3.48	2.16
6. CHA	4.86	1.74	5.51	1.66	5.68	1.84
7. CNJ	6.48	2.06	6.69	2.01	6.87	2.44
8. CTR	5.52	1.69	5.87	2.00	6.45	2.15
9. DFR	5.58	1.72	5.18	1.76	5.89	2.22
10. DOM	3.37	2.21	5.34	2.29	4.74	2.51
11. E/A	4.92	2.12	4.34	2.48	4.96	2.44
12. EMO	5.37	1.55	4.35	1.60	4.63	1.65
13. ENY	3.80	2.02	4.44	2.12	3.94	2.37
14. EXH	5.21	1.85	6.16	1.85	5.18	1.82
15. F/A	3.93	1.50	5.03	1.73	5.46	1.38
16. HAR	4.91	2.01	3.98	1.86	4.93	1.76
17. HUM	3.60	2.10	3.36	1.87	4.39	2.33
18. IMP	5.41	1.86	6.72	1.80	5.88	2.01
19. NAR	4.57	1.99	5.18	1.79	4.03	1.74
20. NUR	4.75	2.22	5.22	2.16	4.42	2.23
21. OBJ	7.43	2.26	7.16	2.44	7.94	2.05
22. ORD	4.31	1.81	4.91	1.78	4.21	2.17
23. PLY	4.16	1.86	6.23	1.75	5.37	2.44
24. PRA	5.16	2.10	5.35	1.74	5.36	2.49
25. REF	5.07	1.91	5.36	2.14	6.09	2.29
26. SCI	3.68	1.90	2.50	1.87	2.85	1.67
27. SEN	3.87	1.56	3.72	1.54	4.47	2.06
28. SEX	4.51	1.79	3.79	1.69	3.18	2.04
29. SUP	5.15	1.83	5.25	1.37	5.02	1.79
30. UND	5.39	1.88	6.11	1.84	6.20	2.20
Grand Mean	4.68	1.90	5.11	1.91	5.08	2.13

[1]Form 1069 is based on a sample of 553 cases drawn from 27 classrooms.

[2]Form 570 is based on a sample of 179 cases drawn from 8 classrooms.

[3]Form 1170 combines two sub-forms, 1170-1 (477 cases) and 1170-151 (462 cases) from a total of 31 classrooms.

approximately 1.94. Thus, mean scores of 6.36 or higher and mean scores of 3.74 or lower would be suggestive of a distinctive press in any particular classroom.

Item Discrimination

Table 2 summarizes the average item discrimination index (DI) for each scale for each of the three forms. The grand means for Form 1069 and 570 were somewhat lower than DI data for other Syracuse Indexes (Stern, 1970). However, the DI's were sufficiently high to indicate a considerable amount of consistency of the items with their respective scales.

The DI's for Form 1170 were somewhat higher and compared favorably with other Syracuse Indexes. The individual item DI's for Form 1170 appear in Appendix F. For Form 1170, 91 percent of the items had DI's above .30. Less than 4 percent were below .20. Only one item was negative.

Reliability

The scale reliabilities, based on Kuder-Richardson Formula 20, are also summarized in Table 2. For Forms 1069 and 570 the grand means were .55 and .54 respectively. These reliabilities were more than .10 lower than those obtained for other Syracuse Indexes. For Form 1170, however, the reliabilities were considerably higher and compared favorably with the other Syracuse Indexes.

Form 1170 was distinctly improved in a number of ways. Since it was constructed from the best items of Forms 1069 and 570, its basic structure was strengthened. Improvements in the administration of Form 1170 undoubtedly enhanced its reliability. In addition, the sample was larger and included a wider variety of classrooms.

Two scales, 12 (Emotionality) and 15 (Fantasied Achievement) were particularly low. It is difficult to explain this, although it is noted that on several of the other Syracuse Indexes these two particular scales also were somewhat low. It should be noted that despite this lower reliability, both scales discriminated at .05 levels or better between sexes, subjects, grades, classrooms, and levels on CEI Form 1170.

Although the need still exists to further examine the reliability of subsequent administrations of CEI Form 1170, it would seem reasonable to conclude that the reliabilities of most scales have reached adequate levels.

TABLE 2. Average Item Discrimination Indexes and Reliabilities of Three Forms of the CEI.

Scale	Form 1069[1]		Form 570[2]		Form 1170[3]	
	ID	KR_{20}	ID	KR_{20}	ID	KR_{20}
1. ABA	50[4]	66	63	79	52	76
2. ACH	43	43	42	50	57	72
3. ADA	40	45	46	52	47	55
4. AFF	49	60	51	64	48	63
5. AGG	50	64	49	59	53	72
6. CHA	41	47	40	35	45	50
7. CNJ	50	61	50	61	60	80
8. CTR	43	34	49	54	53	69
9. DFR	42	41	43	42	55	72
10. DOM	54	67	56	68	63	77
11. E/A	53	60	62	76	61	74
12. EMO	39	19	39	22	41	32
13. ENY	49	63	51	61	58	75
14. EXH	45	50	45	51	45	53
15. F/A	35	15	42	32	34	17
16. HAR	42	65	45	54	42	54
17. HUM	51	66	46	53	57	75
18. IMP	46	45	42	49	50	61
19. NAR	49	61	43	38	42	48
20. NUR	54	70	53	66	55	72
21. OBJ	53	76	59	80	49	77
22. ORD	44	50	43	48	54	69
23. PLY	45	55	42	52	61	80
24. PRA	51	60	43	34	62	76
25. REF	46	55	52	60	58	74
26. SCI	46	63	45	63	39	51
27. SEN	37	43	37	36	50	68
28. SEX	43	53	41	46	50	66
29. SUP	45	50	33	16	43	54
30. UND	46	54	45	52	54	71
Grand Mean	46	55	47	54	51	66

[1]Form 1069 is based on a sample of 553 cases drawn from 27 classrooms.

[2]Form 570 is based on a sample of 179 cases drawn from 8 classrooms.

[3]Form 1170 combines two sub-forms, 1170-1 (477 cases) and 1170-151 (462 cases) from a total of 31 classrooms.

[4]All entries in this table should be preceded by a decimal point.

Ability to Differentiate

Tables 3, 4, and 5 summarize the results of a simple one-way analysis of variance for each of the following variables: sex, grade, subject, and classroom (for the third form of the CEI, 1170, a fifth variable, school level, was examined). Also summarized in these tables are the results of Bartlett's test for homogeneity of variance. The probabilities for the F values and L values (Bartlett's Test) are presented. Appendix F summarizes the F ratios and indicates that most scales differentiated between grade, subject, and classrooms at high levels of significance.

The results tended to confirm expectations. It is noted that fewer scales differentiated between sex than between other variables. In general, the CEI exhibited considerable ability to differentiate between grades, subjects, classrooms, and levels. For Form 1069, for example, the differences were significant for 29 out of 30 scales with regard to grade and subject, and for all 30 scales with regard to classroom.

The fact that there were fewer grade levels represented and only three different subject areas for Form 570 would seem to account for the fewer number of significant differences. With regard to grade level, differences were significant for 26 out of 30 variables; with regard to subject areas, differences were significant in 19 out of 30 variables.

The pattern for CEI Form 1170 (Table 5) was similar to that of the two previous forms. It is noted, however, that there were more significant differences with regard to sex. With regard to level, there were significant F ratios for 21 of the 30 scales. Three levels were examined: junior high (grades 7 and 8), senior high (grades 9 through 12), and college.

Tables 3, 4, and 5 clearly show that, with the exception of sex, the scales exhibited a high degree of ability to differentiate among the variables.

Interaction of Variables

In addition to examining the ability of the scales to differentiate among such variables as sex, grade, subject, classroom and level, we are also concerned with the interaction of variables. Table 6 summarizes the results of two- and three-way analyses of variance for a number of combinations of variables. The statistically significant interactions are presented. For example, with regard to the interaction of sex and subject, it is noted that there was only one statistically significant interaction--having to do with scale 10 (Dominance). With regard to sex and grade there were six significant interactions. In examining all the possible significant interactions, it is noted that out of a potential 180 combinations, only 24 were

TABLE 3. One-Way Analysis of Variance Between Sexes, Grades, Subjects, and Classrooms for CEI Form 1069.

Scale	Source of Variation							
	Sex		Grade		Subject		Classroom	
	F	L	F	L	F	L	F	L
1. ABA	.001		.001	.001	.001	.001	.001	.001
2. ACH			.001		.001		.001	
3. ADA	.01		.001		.001		.001	.05
4. AFF			.001		.001	.05	.001	.01
5. AGG	.001	.01	.001	.05	.001		.001	.05
6. CHA			.001	.05	.001		.001	
7. CNJ	.001		.001	.05	.001		.001	.01
8. CTR	.01		.01	.01	.001		.001	.05
9. DFR			.001		.001	.01	.001	
10. DOM	.01		.001		.001	.05	.001	
11. E/A			.01		.001	.05	.001	
12. EMO			.001		.001		.001	
13. ENY			.001	.01	.001		.001	
14. EXH			.001		.001		.001	
15. F/A				.05	.001		.01	
16. HAR			.001	.05	.001	.001	.001	.05
17. HUM			.001	.01	.001	.01	.001	
18. IMP			.001		.001	.05	.001	
19. NAR			.001		.001	.05	.001	
20. NUR			.001		.001		.001	
21. OBJ	.001		.001	.001	.001	.001	.001	.001
22. ORD			.001			.05	.001	
23. PLY			.001		.001	.01	.001	
24. PRA			.01		.001		.001	
25. REF			.001	.05	.001		.001	.05
26. SCI	.05		.001	.001	.001		.001	
27. SEN			.001	.001	.001	.01	.001	.01
28. SEX			.001		.001		.001	.05
29. SUP			.001		.001	.001	.001	
30. UND			.001		.001		.001	

TABLE 4. One-Way Analysis of Variance Between Sexes, Grades, Subjects, and Classrooms for CEI Form 570.

Scale	Source of Variation							
	Sex		Grade		Subject		Classroom	
	F	L	F	L	F	L	F	L
1. ABA	.05		.001	.01	.001	.01	.001	.001
2. ACH			.001		.05		.001	
3. ADA	.05		.001		.001		.001	
4. AFF	.01		.05	.05	.001	.01	.001	
5. AGG			.001		.001		.001	
6. CHA			.001		.05		.01	
7. CNJ	.01		.05	.05	.05		.01	.05
8. CTR	.05		.001		.001		.001	
9. DFR			.001		.01		.001	
10. DOM			.001		.01		.001	
11. E/A			.001		.001		.001	
12. EMO			.01				.01	
13. ENY								
14. EXH			.001	.01			.001	
15. F/A								
16. HAR			.001		.001		.001	
17. HUM			.001				.001	
18. IMP			.01				.001	
19. NAR			.001				.001	
20. NUR	.01		.001		.001		.001	
21. OBJ	.05		.001		.001		.001	.01
22. ORD			.001				.001	
23. PLY					.05	.05	.001	.05
24. PRA			.001		.001		.001	
25. REF			.01			.05	.05	
26. SCI			.001				.001	
27. SEN		.05	.001		.01		.001	
28. SEX			.01				.01	
29. SUP					.05			
30. UND			.001		.001		.001	

TABLE 5. One-Way Analysis of Variance Between Sexes, Grades, Subjects, Classrooms, and Levels for CEI Form 1170.

Scale	Sex		Grade		Subject		Classroom		Level	
	F	L	F	L	F	L	F	L	F	L
1. ABA			.001	.001	.001	.001	.001	.001	.001	.001
2. ACH	.05	.05	.01		.001	.001	.001	.05		
3. ADA			.001		.001		.001		.001	
4. AFF	.01		.001		.01		.001			
5. AGG			?[1]	?[1]	.001	.001	.001		.001	.001
6. CHA			.001		.001		.001			
7. CNJ			.001	.001	.001	.001	.001	.001	.001	.01
8. CTR			?[1]	?[1]	.001		.001		.001	.01
9. DFR			.001	.01	.001	.001	.001	.01	.001	.001
10. DOM			.001	.001	.001	.05	.001	.01	.001	.001
11. E/A			.001		.001		.001			
12. EMO	.05		.001		.001	.05	.001		.001	
13. ENY			.01		.001	.05	.001		.001	.05
14. EXH	.001		.001	.05	.001	.01	.001		.001	
15. F/A	.01		.05		.05		.001		.01	
16. HAR	.01		.001				.001			
17. HUM		.05	.001	.05	.001	.01	.001			
18. IMP	.01		.001		.001		.001		.001	.05
19. NAR	.05		.001		.001		.001		.001	
20. NUR			.001		.05		.001	.01		
21. OBJ	.001	.01	.001	.001	.001	.001	.001	.001	.001	.001
22. ORD			.001		.001	.05	.001		.01	.01
23. PLY		.01	.001	.05	.001	.05	.001		.001	.001
24. PRA			.001	.05	.001	.05	.001		.001	
25. REF			.001		.001	.05	.001		.001	
26. SCI			.05		.01		.001			
27. SEN	.05		?[1]	?[1]	.001	.001	.001		.001	.001
28. SEX	.05		?[1]	?[1]	.001	.001	.001		.001	.05
29. SUP	.05		.001				.001	.01		
30. UND		.05	.001		.001		.001		.001	

[1]Data not available.

Table 6. Two- and Three-Way Analyses of Variance Between Selected Variables for CEI Form 1170.

Scale	Source					
	Sex X Subject	Sex X Grade	Sex X Classroom	Sex X Level	Subject X Grade	Sex X Subject X Grade
1. ABA						
2. ACH		.05	.05			.01
3. ADA		.05				.001
4. AFF						
5. AGG					.01	.001
6. CHA						
7. CNJ						
8. CTR		.05				
9. DFR			.05			
10. DOM	.01					.001
11. E/A		.01				
12. EMO						
13. ENY						
14. EXH						
15. F/A						
16. HAR						
17. HUM			.01		.01	
18. IMP						
19. NAR			.05			
20. NUR		.01			.05	
21. OBJ						
22. ORD						
23. PLY					.001	
24. PRA					.05	
25. REF						.001
26. SCI						
27. SEN					.05	
28. SEX			.05			
29. SUP						
30. UND		.05			.01	

statistically significant. Since there seemed to be no consistent interactions, it would seem reasonable to conclude that there is no significant confounding of variables.

Item Consensus

In addition to item homogeneity, it would seem reasonable to expect that each item would be answered in the same way by most students using a given classroom as a reference. High consensus on items is important. It would seem desirable to expect class members to answer items in a common way, say, 70 percent of the time.

In examing item consensus, it was observed that consensus differed from classroom to classroom. Certain items achieved high consensus in some classrooms, whereas identical items achieved low consensus in others. A number of reasons might account for this, such as how well the students personally knew the teacher, how long the class had been meeting, or the amount of evidence that was available to the student to make a judgement.

Table 7 is a summary of the responses to each item by students in one of the investigator's own classes. Since there were only eleven students in the course, the investigator had the opportunity to become well acquainted with each student. In addition, he was thoroughly familiar with the content of the course, the general classroom procedures, and other matters relating to the classroom climate.

By examining the responses to each item, the investigator was able to discover a number of problems students had in answering items where consensus was low. It should be noted that for many items consensus was extremely high. For example, on scale 1 (Abasement) there was 100 percent agreement on eight items and 91 percent agreement on the other two items. The conclusion to be drawn was that there was almost unanimous agreement that Abasement press was extremely low. On other scales, 14 (Exhibitionism), for example, consensus was low on several of the items. On only five of the 10 items in scale 14 was consensus above 70 percent. (Percentage scores above 70 and below 30 on Table 7 indicate consensus above 70 percent.)

It is interesting to examine individual items to help account for problems in consensus. The first five items on scale 1 (Abasement) for Form 1069 are as follows:

1. The teacher is very interested in student ideas or opinions about classroom affairs. (Keyed false.)
2. You need permission to do anything in this classroom. (Keyed true.)
3. Students are seldom kept waiting when they ask the teacher for help. (Keyed false.)
4. The teacher very often makes you feel like a child. (Keyed true.)

TABLE 7. Item Consensus for a Graduate Education Classroom Using CEI Form 1069 with 11 Cases. Percentage of Agreement as Keyed.

Scale	Scale Items									
	1	2	3	4	5	6	7	8	9	10
1. ABA	9	0	9	0	0	0	0	0	0	0
2. ACH	27	45	27	64	91	36	100	18	45	18
3. ADA	73	27	100	0	64	0	9	0	0	0
4. AFF	73	82	64	100	91	91	91	82	9	9
5. AGG	27	18	0	27	0	9	36	0	9	9
6. CHA	73	73	100	45	91	9	0	91	100	27
7. CNJ	91	82	73	82	100	82	82	36	100	100
8. CTR	91	82	73	100	91	100	9	64	91	18
9. DFR	9	82	27	18	82	45	100	27	82	9
10. DOM	36	0	18	18	0	0	18	18	9	0
11. E/A	91	82	73	55	45	73	27	82	100	73
12. EMO	73	9	82	82	55	64	27	27	55	73
13. ENY	82	64	18	27	100	27	91	100	36	18
14. EXH	55	64	55	64	9	73	9	18	100	55
15. F/A	82	64	55	91	0	64	55	27	18	73
16. HAR	9	100	0	9	0	18	73	27	64	64
17. HUM	36	0	82	91	91	0	55	91	9	100
18. IMP	91	18	64	27	64	82	82	9	45	45
19. NAR	91	55	9	0	9	45	0	27	91	18
20. NUR	64	55	9	0	0	82	0	82	73	91
21. OBJ	91	82	100	100	91	100	91	100	100	100
22. ORD	100	0	0	18	36	91	45	82	9	100
23. PLY	36	9	9	9	73	64	91	100	27	0
24. PRA	82	91	91	0	100	45	91	82	45	82
25. REF	73	0	91	82	91	100	91	100	91	18
26. SCI	9	55	100	0	82	0	9	45	0	55
27. SEN	36	18	9	0	0	100	0	0	100	9
28. SEX	18	91	73	82	18	9	9	27	91	82
29. SUP	91	100	91	18	9	64	82	100	0	73
30. UND	36	100	91	45	100	100	91	82	45	100

5. Students are made to take the blame for things whether they did them or not. (Keyed true.)

It can be seen from Table 7 that there is very high consensus among the students on these five items. Only one student scored the correct response on item 1 and one student scored the correct response on item 3. In other words, of the 55 responses (11 per item) 53 of the responses were in the direction of Assurance as opposed to Abasement.

On scale 14 (Exhibitionism), on the other hand, the consensus was not nearly so pronounced. The first five items of scale 14 (Exhibitionism) are as follows:

1. Students in this class like to dress colorfully. (Keyed true.)
2. When a student does a project or wins a prize, everybody hears about it. (Keyed true.)
3. The teacher provides opportunities for students to develop their skills and talents directing the work of others. (Keyed true.)
4. Most students here tend to be shy in groups. (Keyed false.)
5. Students in this class like to draw attention to themselves. (Keyed true.)

With the exception of item 5 on scale 14 (Exhibitionism), the consensus of the items tended to be mixed. The resulting press for Exhibitionism would tend not to be very pronounced.

Item 1 has to do with whether or not students in the class like to dress colorfully. Fifty-five percent of the students agreed with this item; 45 percent disagreed. In the investigator's opinion, the students did dress rather colorfully, but not more so than the average young graduate student. The students in this particular course were all first-year graduate students, approximately 22 years old. Their perceptions of colorful dress are probably somewhat different than the investigator's, since students do, in fact, dress more colorfully today than they did, say, ten years ago. Probably whether or not a student agreed with this item depended upon what his perception of what colorful dress actually was.

Sixty-four percent of the class agreed that when a student does a project or wins a prize, everybody hears about it. Since the students in this particular class knew each other rather well, they probably would tend to know what projects each was involved in and would probably hear about it if one of them won a prize. However, the relationship of the students probably was not as close as it would be for a typical secondary school classroom.

One can continue to speculate about the reasons for the low consensus on this scale, but it would be difficult to pinpoint precise causes without further investigation, such as, possibly, discussing the individual items with students and asking the students why they responded in the way they did to that particular item.

The first two items in scale 22 (Order) offer an interesting contrast and yet are consistent with the actual situation. The first item is, "Most students seldom change places in this classroom." (Keyed true.) This was true. After the first or second class meeting, students tended almost always to take the same seat. The second item, "The teacher gets very upset if students happen to report to class a little late," (Keyed true.) also had 100 percent agreement. In other words, the teacher took little notice of students who arrived late. In examining the other responses to scale 22 it can be seen that there was a trend away from a press toward Order, although the trend was not distinct.

By investigating many individual items, the investigator was able to get a rough validation for many of the items as they related to this particular classroom. There were a number of items where there was no question as to what the response had to be, for example, items dealing with the physical appearance of the classroom, such as having pictures on the wall. For other items, it was easy to see why responses were mixed, since the students really had little or no evidence upon which to base a response. Table 7 indicates that consensus was below 70 percent for approximately 17 percent of the items for that particular classroom.

CHAPTER IV

Conclusions and Recommendations

It is recalled that the purpose of this research was to analyze and refine an instrument designed to measure classroom environmental press. The expectations of the study were that an instrument, the Classroom Environment Index, would exhibit adequate homogeneity and reliability and would differentiate among classroom environments.

In general,the expectations of the study were realized. The third form of the Classroom Environment Index, which was constructed from the best items of two previous forms, was adequate with regard to scale homogeneity. The average item discrimination index compared favorably with the other Syracuse Indexes.

The reliabilities of the scales of the first two forms of the CEI were disappointingly low--considerably lower than the other Syracuse Indexes. There was considerable improvement, however, in the third form, with reliabilities that approached those of the other Syracuse Indexes. The reliabilities of two scales were particularly low and adversely effected the average reliability of the 30 scales.

Although the third form, 1170, might be considered adequate for further experimental purposes, it is believed that further development of the instrument is needed. Plans are under way to use the data obtained in the present study to further refine the CEI. The individual item discrimination index is useful in eliminating or revising weak items. The possibility exists that certain of the scales, Fantasied Achievement, for example, might not lend themselves for improvement in classroom use.

The following recommendations are presented with regard to the further use and development of the CEI:

1. It is best if the CEI can be administered in the regular classroom situation by the regular classroom teacher. The present study suggests that problems are created by attempting to administer the instrument in non-classroom situations, such as study halls or large instructional areas.

2. It is difficult to administer the instrument to large groups. Where there are more than approximately 30 students, assistance is usually needed. Problems could be expected in situations where large lecture sections are being tested. In the typical classroom section of approximately 30 students, there were very few difficulties, especially when the regular teacher either administered the instrument or was available for assistance.

3. It is necessary to assure the teachers and students of anonymity or confidentiality. Since many of the items relate directly to the teacher, questionable results would probably be obtained in situations where either the students or the teachers felt that the information would not be treated confidentially. In one testing situation, the students became very upset because they thought the items might reflect adversely upon their teacher. It took a considerable amount of reassurance on the part of the teacher to convince them that their responses were not being used to judge the teacher.

4. Where possible, students should complete all 300 items. If the present plan to continue with two sub-forms of 150 items continues, it is still desirable to have all students complete both forms.

5. Time becomes a problem, especially at the lower grade levels. The average college student can easily complete all 300 items within the typical 50-minute classroom period. Upper ability level secondary students can usually complete the entire instrument within a typical secondary school period. The average secondary school student, however, in the typical classroom period, has difficulty completing 300 items, but can manage one of the sub-forms. This means that if one desires all 300 items from the typical secondary student, more than one classroom period would probably be needed. In some secondary school situations, it is possible to extend the period, but in many instances this creates a number of problems.

6. Some students can be expected to have difficulty reading some of the test items, especially at the lower grade levels. An average group of fifth graders had a considerable amount of difficulty with vocabulary. If the CEI is used with students who have trouble reading it, special assistance might be required to help them understand individual items. Additional time would also be required to complete the instrument. The present study would suggest that the CEI can be effectively used with average students as low as grade 7. Below grade 7, the average student seems to encounter difficulty in interpreting test items, although above-average upper elementary grade pupils seem to be able to complete the instrument without difficulty. A possible future study might be to determine the reading level of the CEI, using some established formula.

7. Even in its experimental form, the instrument has some possible value for the classroom teacher who wishes to examine and analyze his own teaching. Normative data are beginning to become available and it is possible for a teacher to compare the profile of his own class with that of existing classrooms. It is noted from Tables 3-5 that the mean score for the scale Order ranges from 4.21 to 4.91. If a teacher should find his score considerably above or below this mean, he could raise a number of questions regarding the

implications of this divergence. The same would hold true for any scale. Extremely high score on Aggression, for example, might lead a teacher to speculate regarding its causes. It might be due to the nature of the students, the climate created by the teacher, the restrictive administrative regulations under which the classroom operates, or any number of other factors.

8. It was concluded in the present study that it is preferable not to have the student do the coding on the answer sheet. In addition to being time-consuming, there were many more errors when students did the coding.

Further Development

The intent of this study was not to develop 30 scales, but to develop an input out of which factor parameters could be obtained. One purpose of this research was to develop scales which would serve adequately as input for ultimate factoring. What this looks forward to is the development of a more limited number of factored parameters analogous to the much smaller number of first-order environmental factors that have been obtained in analyses of colleges, high schools, school buildings, and industrial sites. This smaller number of factors would be considered more wieldy and less redundant and complex than working with the 30 scales.

The intent was to develop an instrument that would be useful across grade levels so that comparisons could be made--so that classes in different subject areas and at different educational levels could be compared with each other. For example, it would be of considerable interest to be able to discuss the evolution or development of particular parameters as one moves from elementary to middle to senior high school to college. If a factor like student self-direction were to emerge, then it would be of great importance to see whether such a factor showed an increase as one moved upwards through the educational system, regardless of the school or class type. If this proved to be the case, then one would be able to look at an individual classroom that was not consistent with the general trend and ask, "What is it that is happening here?"

Thus the items have to be general enough so that they are potentially applicable anyplace. But then, clearly, the important systematic differences between places can still emerge. What these factors will make it possible to do is not only to analyze the unique qualities of any given classroom, but also to establish develo[illegible]ng qualities. Having an instrument that is available at all levels means that one can not only establish the sequential development, but can also see where a given class fits into that general picture. Therefore, every effort was made to develop items that would be applicable at different levels and that would be sufficiently general that they would prove to be useful at all levels.

Additional research is being planned:

1. A further refinement of the CEI will attempt to eliminate obviously weak items.

2. The homogeneity and reliability of the new revision will be confirmed.

3. The ability of the scales to differentiate between classrooms will be examined.

4. When sufficient data are accumulated, the instrument will be factor analyzed. The expectation is that factors similar to those obtained for the CCI and HSCI will emerge.

5. Eventually a manual will be written which will summarize administrative and scoring procedures, norms, and additional information designed to assist other researchers.

6. Long range plans include studies of relationships of classroom environments with such variables as creativity, teacher personality, and student achievement.

A fourth revision of the CEI, Form 971, has been constructed in which the weakest items in Form 1170 were replaced by stronger items from the previous two forms. It is believed that this fourth revision is adequate for general research purposes. It is expected to be available late in 1971.

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APPENDIXES

Appendix A

Scale Definitions (Stern, 1970)

1. ABA Abasement -- ASS Assurance: Self- depreciation and self-devaluation as reflected in the ready acknowledgement of inadequacy, ineptitude, or inferiority, the acceptance of humiliation and other forms of self-degradation versus certainty, self-confidence, or self-glorification.

2. ACH Achievement: Surmounting obstacles and attaining a successful conclusion in order to prove one's worth, striving for success through personal effort.

3. ADA Adaptability -- DFS Defensiveness: Accepting criticism, advice, or humiliation publicly versus resistance to suggestion, guidance, direction, or advice, concealment or justification of failure.

4. AFF Affiliation: Gregariousness, group-centered, friendly, participatory associations with others versus social detachment, social independence, self-isolation, or unsociableness.

5. AGG Aggression -- BLA Blame Avoidance: Indifference or disregard for the feelings of others as manifested in hostility either overt or covert, direct or indirect, versus the denial or inhibition of such impulses.

6. CHA Change -- SAM Sameness: Variable or flexible behavior versus repetition and routine.

7. CNJ Conjunctivity -- DSJ Disjunctivity: Organized, purposeful, or planned activity patterns versus uncoordinated, disorganized, diffuse, or self-indulgent behavior.

8. CTR Counteraction: Persistent striving to overcome difficult, frustrating, humiliating, or embarrassing experiences and failures versus avoidance or hasty withdrawal from tasks or situations that might result in such outcomes.

9. DFR Deference -- RST Restiveness: Respect for authority, submission to the opinions and preferences of others perceived as superior versus noncompliance, insubordination, rebelliousness, resistance, or defiance.

10. DOM Dominance -- TOL Tolerance: Ascendancy over others by means of assertive or manipulative control versus nonintervention, forbearance, acceptance, equalitarianism, permissiveness, humility, or meekness.

11. E/A Ego Achievement (derived from Exocathection-Intraception): Self-dramatizing, idealistic social action, active or fantasied realization of dominance, power, or influence achieved through socio-political activities in the name of social improvement or reform.

12. EMO Emotionality -- PLC Placidity: Intense, open emotional expression versus stolidness, restraint, control or constriction.

13. ENY Energy -- PAS Passivity (derived from Energy-Endurance -- Psychasthenia): High activity level, intense, sustained, vigorous effort versus sluggishness or inertia.

14. EXH Exhibitionism -- INF Inferiority Avoidance: Self-display and attention-seeking versus shyness, embarrassment, self-consciousness, or withdrawal from situations in which the attention of others might be attracted.

15. F/A Fantasied Achievement (derived from Ego Ideal): Daydreams of success in achieving extraordinary public recognition, narcissistic aspirations for fame, personal distinction, or power.

16. HAR Harm Avoidance -- RSK Risktaking: Fearfulness, avoidance, or excessive caution in situations that might result in physical pain, injury, illness, or death versus careless indifference to danger, challenging or provocative disregard for personal safety, thrill-seeking, boldness, venturesomeness, or temerity.

17. HUM Humanities, Social Science (derived from Endocathection-Extraception: Social Sciences and Humanities): The symbolic manipulation of social objects or artifacts through empirical analysis, reflection, discussion, and criticism.

18. IMP Impulsiveness -- DEL Deliberation: Rash, impulsive, spontaneous, or impetuous behavior versus care, caution, or reflectiveness.

19. NAR Narcissism: Self-centered, vain, egotistical, preoccupation with self, erotic feelings associated with one's own body or personality.

20. NUR Nurturance: Supporting others by providing love, assistance, or protection versus disassociation from others, indifference, withholding support, friendship, or affection.

21. OBJ Objectivity -- PRO Projectivity: Detached, nonmagical, unprejudiced, inpersonal thinking versus autistic, irrational, paranoid, or otherwise egocentric perceptions and beliefs -- superstition (Activities Index), suspicion (Environment Indexes).

22. ORD Order -- DSO Disorder: Compulsive organization of the immediate physical environment, manifested in a preoccupation with neatness, orderliness, arrangement, and meticulous attention to detail versus habitual disorder, confusion, disarray, or carelessness.

23. PLY Play -- WRK Work: Pleasure-seeking, sustained pursuit of amusement and entertainment versus persistently purposeful, serious, task-oriented behavior.

24. PRA Practicalness -- IMP Impracticalness (derived from Exocathection-Extraception and Pragmatism): Useful, tangibly productive, business applications of skill or experience in manual arts, social affairs, or commercial activities versus a speculative, theoretical, whimisical, or indifferent attitude toward practical affairs.

25. REF Reflectiveness (derived from Endocathection-Intraception): Contemplation, intraception, introspection, preoccupation with private psychological, spiritual, esthetic, or metaphysical experience.

26. SCI Science (derived from Endocathection-Extraception: Natural Sciences): The symbolic manipulation of physical objects through empirical analysis, reflection, discussion, and criticism.

27. SEN Sensuality -- PUR Puritanism (derived from Sentience): Sensory stimulation and gratification, voluptuousness, hedonism, preoccupation with esthetic experience versus austerity, self-denial, temporance or abstinence, frugality, self-abnegation.

28. SEX Sexuality -- PRU Prudishness (derived from Sex-Superego Conflict): Erotic heterosexual interest or activity versus the restraint, denial, or inhibition of such impulses, prudishness, priggishness, asceticism.

29. SUP Supplication -- AUT Autonomy: Dependence on others for love, assistance, and protection versus detachment independence, or self-reliance.

30. UND Understanding: Detached intellectualization, problem-solving, analysis, theorizing, or abstraction as ends in themselves.

Appendix B

CLASSROOM ENVIRONMENT INDEX

Form 1170-1
(White in Color)

George G. Stern and William J. Walker

There are 150 statements in this booklet. They are for the purpose of describing what goes on in schoolrooms all over the world, from the primary level through the university. The statements have to do with classroom activities, teaching methods, rules and policies, etc. Some may not be typical of your school because things are different from one classroom to another and from one country to another. You are to decide which statements are characteristic of your classroom and which are not. Your answers should tell us what you believe your classroom is actually like rather than what you might prefer it to be. You won't know the answer to many of these statements, because there may not be any really definite information on which to base your answer. Your responses will simply mean that in your opinion the statement is probably true or probably false about your classroom.

Do not omit any item.

DIRECTIONS

On the separate answer sheet please ignore most of the red printing. In the spaces indicated, print the subject for which you are completing this index, your present year in school (grade, form or level), and sex (M or F). Then as you read each statement in the booklet, blacken space:

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

Be sure to fill in the whole space between the dotted lines on the answer sheet with a heavy black mark. Use a standard or soft lead pencil. Erase errors completely. Notice that the numbers on the answer sheet are arranged across the answer sheet, not down.

YOU MUST ANSWER EVERY ITEM!

Work rapidly, going through the entire list of statements as quickly as you can. Please do not make any marks in this booklet.

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Syracuse University
Syracuse, New York, U. S. A.
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LEGEND

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

1. The teacher seldom makes comments that embarrass students.
2. Students have a good deal of respect for those who do well in this classroom.
3. Errors and failure are talked about openly so that others may learn from them.
4. Students in this classroom have little to say to one another.
5. Students seldom mark or mutilate books or furniture in this classroom.

6. The students in this classroom differ greatly in national origin, religion, color, or social class.
7. Most classroom periods are well planned.
8. The teacher supports students who speak up openly and freely in the classroom.
9. Students often go to this teacher for advise.
10. A few students tend to monopolize classroom discussions.

11. Not many students in this room are actively involved in projects intended to improve the school.
12. Students learn that they are not only expected to have ideas but to do something about them.
13. Classroom discussions are often exciting, with a lot of active student participation.
14. Students in this room dress in unusual and striking ways.
15. Students in this room really expect to be <u>somebody</u> in the community someday.

16. You need permission to do <u>anything</u> in this classroom.
17. Students usually manage to pass in this classroom even if they don't work too hard.
18. Students welcome criticism from fellow students.
19. Group spirit in this classroom is good.
20. No one in the classroom has a chip on his shoulder.

21. Students in this classroom seek variety and novelty.
22. Each lesson is clearly related to what the teacher is trying to accomplish.
23. There are procedures available to a student who feels he has been marked unfairly.
24. Most students look up to the teacher with admiration.
25. Some students in this classroom enjoy seeing others get into trouble.

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26. Very few students in this room are either interested or active in student government.
27. Students get very excited just prior to school athletic events.
28. Students put a lot of energy into everything they do in this classroom.
29. When a student does a project or wins a prize, everybody hears about it.
30. The teacher sometimes gets us to imagine what it would be like to be an outstanding scholar or scientist.

31. Students are seldom kept waiting when they ask the teacher for help.
32. This teacher encourages students to exert a great deal of effort.
33. Students usually welcome criticism from the teacher.
34. It is easy to make friends in this classroom.
35. It is easy to stay out of trouble in this classroom.

36. Students in this room like new ideas.
37. The teacher has made the basic organization of the lessons very clear.
38. When they don't do well, most students try hard to improve.
39. The teacher makes it clear that he is the one who is running things.
40. Most students complain bitterly if they think the work is unreasonable.

41. The teacher encourages students to become interested in politics.
42. The teacher often gets very excited or emotional about things.
43. Students in this classroom seem listless and easily tired.
44. There are several show-offs in the room.
45. Students are discouraged from being imaginative when they write.

46. The teacher very often makes you feel like a child.
47. A student can bluff his way through the work in this classroom.
48. The teacher often refers instances of student misconduct to an administrator.
49. A student who is somehow "different" from the rest of the students is not likely to be well accepted.
50. Students sometimes get into disagreeable arguments with the teacher over marks.

51. Everyone in this room has pretty much the same opinions and beliefs.
52. The teacher never runs out of material before the end of the day's session.
53. Students don't hesitate to complain to the teacher.
54. Most students are eager to do what the teacher wants.

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F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

55. If you're not in the right group in this room, you're likely to be left out of things.

56. Students in this room are not likely to take part in school or community clean-up campaigns, beautification projects, etc.
57. Most students get extremely tense before examinations, and really ease up after they are over.
58. Students often get so involved in their work that they do much more work than is required.
59. Most students in this room are so embarrassed when they have to stand up and give a report that they go to pieces.
60. Most students in this room want to live lives pretty much like their parents.

61. Students are made to take the blame for things whether they did them or not.
62. The teacher does not set very difficult goals.
63. Students have to get up in front of the room to speak no matter how embarrassed they might be.
64. Everyone is helped to know one another.
65. The teacher sometimes gets quite hostile towards students.

66. New ideas are frequently tried out in this room.
67. Directions are usually clear so everyone knows what to do.
68. When students don't like some classroom rule or procedure, they really work to get it changed.
69. Some students are stubborn and unmanageable in this room.
70. Student leaders expect you to go along with what they say in this room.

71. The teacher seldom expresses concern over such problems as air and water pollution, over-population, etc.
72. Most students in this room respond to ideas and events in a pretty matter-of-fact mild-mannered way.
73. The day-to-day classroom activities do not require sustained or intensive effort.
74. Most students in this room like to draw attention to themselves.
75. Most students in this room would prefer to become a doctor or a teacher rather than an explorer, pilot, or astronaut.

76. The teacher seldom makes you feel that you are wasting his time.
77. Examinations in this room are thorough and really test how much a student has learned.
78. Parents are regularly informed about a student's progress.
79. The teacher obviously dislikes several students in the room.

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

80. Some students in this room are unpleasantly aggressive.

81. Most students act and dress pretty much alike.
82. The introduction of new skills and concepts is carefully organized by the teacher.
83. If the work happens to be particularly difficult, most students in this room won't even bother to try it.
84. Students frequently disagree with the opinion expressed by the teacher.
85. There are no favorites in this class; everyone gets treated alike.

86. Student discussions on national and international news are encouraged in this classroom.
87. The teacher creates a calm and tranquil atmosphere.
88. Students get so wrapped up in various activities in this room that they often lose all sense of time or of other things going on around them.
89. There are several colorful personalities in this class.
90. The teacher discourages students from thinking that they might become unusually wealthy or famous.

91. The names of students doing unsatisfactory work are sometimes posted in the room or written on the board.
92. Students achieve complex skills and understanding in this classroom.
93. Students are made to explain why they did something when the teacher doesn't like what they've done.
94. The teacher usually refuses to listen to explanations by students who are in trouble.
95. Students who dislike the teacher don't hide their feelings.

96. You never know what the teacher is likely to try next in this classroom.
97. Classroom demonstrations are carefully planned and conducted.
98. Most students do not go to the teacher for help when they are having difficulty.
99. There is an undercurrent of resistance to authority in this classroom.
100. Being on the good side of the teacher is important.

101. Students from this classroom are deeply interested in the problems of the local community.
102. It is not easy to hurt the feelings of students in this classroom.
103. Students put a lot of effort into their homework.
104. Classroom activities are often reported in the school newspaper.

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

105. Students are encouraged to study and imitate the lives of famous men and women.

106. When you get into trouble with this teacher, the other teachers soon know about it.
107. It isn't necessary to work very hard to get a high mark from this teacher.
108. Students pay careful attention to comments the teacher writes on their papers.
109. Students from this classroom spend a great deal of time together outside the classroom.
110. There are occasional fights just before or after the classroom session.

111. Tests and textbooks have been the same for several years.
112. Most students follow a systematic plan of study in this classroom.
113. Most of the students in this classroom keep trying no matter how discouraged they get.
114. Students generally treat this teacher with courtesy and respect.
115. Students have to act like all the others in order to be in with the group.

116. Strong positions are taken in this room regarding civil liberties and minority groups.
117. Several students in this room are moody and temperamental.
118. The classroom is boring.
119. Most students like to fool around in this classroom.
120. The teacher discourages us from thinking about exciting and unusual careers.

121. Certain students seem to enjoy humiliating their classmates.
122. This teacher has the reputation of being easy.
123. The students in this room have been placed here because of their ability level and everyone knows it.
124. The teacher welcomes opportunities for friendly talks with students.
125. The room is always a mess because the students deliberately throw papers and rubbish around.

126. The teacher rarely tries new or different ways of doing things.
127. It is hard to plan for exams because students seldom know what they will be tested on.
128. The teacher is willing to hear student complaints.
129. Students seldom make fun of the teacher.
130. Many students in this room argue just for the sake of arguing.

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131. Both the teacher and the students in this room are actively concerned about ways to make this world a better place to live in.
132. Students in this classroom tend to hide their deeper feelings from each other.
133. The teacher's intense involvement in classroom activities seems to be contagious.
134. Many students in this room are somewhat timid, bashful, and shy.
135. For most students in this room future goals emphasize job security and a well-ordered life.

136. The teacher seems to take pleasure in humiliating certain students.
137. The teacher openly praises students who do the best work.
138. When students receive their tests or other materials back, they often discuss the teacher's comments with others in the classroom.
139. Everyone in this classroom is warm and friendly.
140. If a student gets angry in this room he is likely to hide his feelings.

141. Although there are assigned textbooks, the teacher rearranges the materials and adds many new things of his own.
142. It is easy to take clear notes in this classroom when you have to.
143. Students often continue to work outside of the classroom on problems they had difficulty with.
144. Students do not idolize this teacher.
145. There are several students in this room who seem to have too high an opinion of themselves.

146. Students in this room have little interest in discussion of school policy.
147. Very few things in this room arouse much excitement or feeling.
148. The teacher is busy all the time.
149. It would be difficult to embarrass any of the show-offs in this room.
150. Students in this room often daydream about adventurous careers.

Appendix B (Continued)

CLASSROOM ENVIRONMENT INDEX

Form 1170-151
(Green in Color)

George G. Stern and William J. Walker

There are 150 statements in this booklet. They are for the purpose of describing what goes on in schoolrooms all over the world, from the primary level through the university. The statements have to do with classroom activities, teaching methods, rules and policies, etc. Some may not be typical of your school because things are different from one classroom to another and from one country to another. You are to decide which statements are characteristic of your classroom and which are not. Your answers should tell us what you believe your classroom is actually like rather than what you might prefer it to be. You won't know the answer to many of these statements, because there may not be any really definite information on which to base your answer. Your responses will simply mean that in your opinion the statement is probably true or probably false about your classroom.

Do not omit any item.

DIRECTIONS

On the separate answer sheet please ignore most of the red printing. In the spaces indicated, print the subject for which you are completing this index, your present year in school (grade, form or level), and sex (M or F). Then as you read each statement in the booklet, blaken space:

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

Be sure to fill in the whole space between the dotted lines on the answer sheet with a heavy black mark. Use a standard or soft lead pencil. Erase errors completely. Notice that the numbers on the answer sheet are arranged across the answer sheet, not down.

YOU MUST ANSWER EVERY ITEM!

45

Work rapidly, going through the entire list of statements as quickly as you can. Please do not make any marks in this booklet.

The items in this booklet are numbered 151 through 300. On the answer sheet please ignore the first 150 items and start with number 151.

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Syracuse, New York, U. S. A.

LEGEND

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

Please start with number 151 on your answer sheet.

151. The teacher discourages students in this classroom from going for medical help even when they appear to be sick.
152. The teacher and students in this room are concerned with literary, musical, artistic or dramatic activities.
153. In this classroom there is very little joking and laughing.
154. The teacher often seems to withdraw into his own thoughts.
155. Most of the students here would be very helpful to a new student who was not familiar with the classroom routine.

156. In this classroom no one needs to be afraid to express a point of view which is unusual or unpopular.
157. The teacher has a formal set of rules and procedures intended to make the classroom run smoothly.
158. The teacher has a tremendous sense of humor.
159. The things learned in this classroom will be of great value in later life.
160. The teacher is interested in books and movies dealing with psychological problems.

161. The classroom is well supplied with books and magazines on science.
162. The teacher really enjoys good food and likes to talk about it sometimes.
163. There is quite a lot of going out together among the students in this classroom.
164. The teacher shows concern for the feelings of the students in this room.
165. In classroom discussions, papers and exams, the main emphasis is on breadth of understanding and critical judgment.

166. Students in this classroom would prefer a fast car to a safe one.
167. Discussions comparing differences in the style and development of current music forms -- rock, soul, jazz, etc. -- frequently occur in this classroom.
168. Students in this classroom are always coming up with new fads and expressions.
169. Students in this room take a great deal of pride in their personal appearance.
170. The teacher goes out of his way to be available to give extra help to anyone who needs it in this room.

171. Everyone has the same opportunity to get good marks in this classroom because the tests are marked fairly.

LEGEND

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F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

172. We tend to have a systematic daily classroom routine.
173. Humorous cartoons and pictures are often displayed in the room.
174. Most of what is learned in this classroom is of obvious practical value.
175. Students are given plently of time to think about classroom questions.

176. In this classroom there are not many opportunities for the discussion of scientific topics.
177. The view from the windows of this classroom is not particularly beautiful or pleasing.
178. Several boys have selected seats to be near girls they like.
179. Outside of the classroom the teacher is friendly and often chats with the students.
180. Quite frequently students will get together on their own and talk about things they have learned in this classroom.

181. Posters, drills, or slogans stressing physical safety are to be found in this classroom.
182. Few students in this classroom would be interested in a film about writers or poets.
183. Students frequently do things on the spur of the moment in this classroom.
184. Looking and acting "right" is important to the teacher and students in this room.
185. Students show deep concern when a classmate is having a difficult time or is in trouble in some way.

186. If the student does something wrong the teacher is usually understanding and gives him the benefit of the doubt.
187. Students take great pains to keep their essays, worksheets, and notebooks neat and legible.
188. The teacher sometimes includes foolish questions in an exam just to make students laugh.
189. Despite the satisfaction that some students get from this classroom, they would agree that it has little to do with earning a living.
190. The teacher likes students to use a lot of imagination and creativity and gives encouragement to those in this room who do.

191. It would not be appropriate to submit the work that students do in this classroom to a science contest or science exhibit.

LEGEND

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192. Little goes on in this classroom that contributes to one's sense of pleasure in the physical experience of sound, color, texture, etc.
193. Some of the books read in connection with this classroom include references to sex.
194. The person who is always trying to "help out" is likely to be regarded as a nuisance in this room.
195. We rarely discuss serious subjects in this classroom or try to get to basic causes.

196. Students in this classroom are seldom reminded to take preventive measures against illness.
197. Students in this classroom seldom read books which deal with political or social issues.
198. The teacher dislikes having to make quick decisions.
199. Students in this classroom spend a lot of time decorating their notebooks and book covers.
200. Students often run errands and do other personal favors for this teacher.

201. Students are sometimes penalized without fully understanding the reason for it.
202. In this classroom the motto seems to be "a place for everything and everything in its place."
203. Having a good time comes first with most students in this classroom.
204. The teacher is good at operating the instructional equipment -- projectors, recorders, etc. -- in this classroom.
205. Students really don't think very deeply about ideas presented in this classroom.

206. Students in this classroom have very little interest in science.
207. There is no student art work on display in this room.
208. Students in this classroom are not particularly concerned about modesty in speech or dress.
209. Students are encouraged to make their own selection of topics for projects.
210. The teacher is a real scholar.

211. Procedures to be followed in case of fires, air raids, or earthquakes, etc., are prominently posted in the classroom.
212. Students from this classroom seldom get together to discuss durrent social problems and issues.

LEGEND

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F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

213. Some students don't seem to have much control over their behavior in this classroom.
214. Students in this room who are not neatly dressed are likely to have this called to their attention by the teacher.
215. There is a lot of interest here in collecting packets of food, clothing, books, etc., to help others.

216. If a student prepares a report or essay carefully, the teacher will give him a good mark even if the teacher doesn't agree with him.
217. The teacher finds it difficult to keep to any routine.
218. New jokes and funny stories get around this classroom in a hurry.
219. The skills developed in this classroom will continue to be useful throughout a person's lifetime.
220. In this classroom there is little concern for serious religious or ethical matters.

221. Students in this classroom are encouraged to plan their own lab projects.
222. Students kick off their shoes, loosen their ties, and otherwise make themselves comfortable in this classroom.
223. In this classroom the teacher usually knows who is going out with whom.
224. The teacher takes the attitude that students in this classroom should work out their own problems.
225. On written work in this classroom, neatness and proper style count more than intelligence and insight.

226. Quite a few students from this classroom smoke.
227. Students in this classroom seldom talk about modern literature or poetry.
228. Students in this room sometimes make sudden comments that have little to do with the lesson.
229. No one seems to notice if a student comes to the class with new clothing or a different hair style.
230. The teacher encourages the students in this room to develop an attitude of service to their fellow man.

231. The teacher treats questions in the classroom as if the students were criticizing him personally.
232. The classroom often looks a little untidy.
233. Everyone has a lot of fun in this classroom.

LEGEND

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

234. Students in this room are skillful in working together to solve problems.
235. Students in this classroom would enjoy discussing different ideas of truth.

236. This classroom provides an opportunity to work in a well-equipped science laboratory.
237. The teacher makes a point of wearing clothes that are comfortable as well as attractive.
238. Students from this classroom fall in love or get crushes on each other rather easily.
239. The teacher is not interested in student's personal problems.
240. The teacher does little more than repeat what is in the textbook.

241. Any condition that might be considered a physical hazard (loose floor board, drafty room, etc.) is quickly corrected.
242. Students in this classroom like to talk about the words of current popular songs that refer to matters of social significance.
243. Students are very slow in forming opinions in this classroom.
244. The teacher encourages the students in this room to be well dressed and well groomed.
245. Students from this classroom really support community fund drives.

246. There is a feeling of distrust and suspicion in this room.
247. The teacher becomes disturbed when the daily routine of this room is disrupted by unexpected events.
248. The teacher enjoys himself in the classroom and wants others to have a good time too.
249. The classroom atmosphere is practical, emphasizing efficiency and usefulness.
250. The teacher welcomes the students' own ideas on serious matters.

251. Audio-visual aids or other technical services are not used in this room.
252. Much has been done with pictures, colors, and decorations to make the room pleasing to the eye.
253. There is a lot of horseplay between the sexes in this classroom.
254. One nice thing about this classroom is the personal interest the teacher takes in the students.
255. The teacher is deeply interested in what he teaches.

256. Everyone here is "safety-first" conscious, making sure nobody will get hurt.

LEGEND

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way others in the classroom typically feel or act.

257. Students frequently discuss drugs, crime, pollution and other current social problems in the classroom.
258. There is much shouting and yelling as students enter or leave the classroom.
259. Good manners and making a good impression are important in this room.
260. The teacher is actively interested in charities and community services.

261. The teacher always seems to think the students are up to something and makes the worst of even small happenings.
262. Most students carefully preserve their classroom notes, tests, and others instructional materials.
263. The teacher seldom tells jokes or funny stories in class.
264. The teacher stresses the practical use of this subject in helping students to get a good job.
265. Long, serious classroom discussions are common.

266. Students from this classroom frequently work in the science lab on their own time during free periods or after school.
267. There are no paintings or sculpture in this room.
268. Students sometimes tell jokes in this class that some people would consider dirty.
269. The teacher is always willing to help you.
270. In this class there is a lot of interest in learning for its own sake, rather than just for marks.

271. Few students in this classroom bother with raincoats, hats, or other special protection against the weather.
272. This teacher is concerned with problems and issues in modern society.
273. Students frequently speak up in this classroom without worrying about what they are going to say.
274. Many students in this classroom are so wrapped up in their own concerns that they seem unaware of the existence of others.
275. When someone is out sick for a while, the other students in this room let him know he is missed.

276. Students who do good work get good marks in this room even if the teacher doesn't happen to like them personally.
277. Storage shelves and bookcases in this room are carefully labeled.
278. The teacher in this room takes himself very seriously and rarely smiles or jokes with the students.

LEGEND

T -- when you think the statement is generally true or characteristic of your classroom, is something which occurs or might occur, is the way others in the classroom tend to feel or act.

F -- when you think the statement is generally false or not characteristic of your classroom, is something which is not likely to occur, is not the way other in the classroom typically feel or act.

279. Learning to work with others is emphasized in this classroom.
280. The teacher actively discourages student efforts to think through matters of personal belief or conviction.

281. Scientific method is emphasized in this classroom.
282. In papers or essays, vivid and unusual expressions are usually criticized.
283. In this classroom couples frequently sit together, hold hands, whisper, or pass notes.
284. In this room students seldom share their problems with each other.
285. This classroom is outstanding for the emphasis and support given to genuine scholarship and sound thinking.

286. The teacher in this classroom shows little concern for the health of the students.
287. Most students in this classroom are not interested in television programs dealing with social and political problems.
288. Many classroom activities are unplanned and spontaneous.
289. Students here have a great deal of social poise.
290. If the teacher were ill, students in this classroom would send a get-well card.

291. This teacher seems moody and hard to understand.
292. The teacher in this classroom is extremely methodical and systematic.
293. The teacher in this classroom likes to tell amusing stories about his personal life.
294. Most students from this classroom are interested in careers in business, engineering, management, and other practical affairs.
295. The kinds of questions asked in this classroom promote deep thinking.

296. Several students from this classroom have conducted their own personal scientific experiments at home.
297. The teacher has put a lot of effort into making this room pleasing and comfortable.
298. Frank discussions about sex are not uncommon among the students in this classroom.
299. The teacher makes you feel that you can't possibly do the work in this classroom without an enormous amount of help from him.
300. The really satisfying thing about this classroom is the intensity and depth of the discussions we sometimes get into.

Appendix C

INSTRUCTIONS FOR CLASSROOM ENVIRONMENT INDEX ADMINISTRATION

1. Introductory information for students. Inform the classroom that this is part of an educational research project sponsored by the United States Office of Education. The questionnaire that they will be completing is designed to measure classroom characteristics. The information is anonymous; no specific individuals or teachers are identified.

2. Pencils. The students to be tested should have been advised ahead of time to bring to class a standard #2 or softer pencil. The administrator should have an extra supply of pencils for those who have forgotten.

3. Distribution of booklets. The questionnaire has been divided into two halves. The first 150 items are on white sheets, the second on green. To save time, each student is being asked to complete just one of these. In order to have approximately the same number of students of the same sex completing each part, please distribute the booklets to one sex first, alternating white and green booklets among them as you go. Then do the same for the other sex (if there are persons of the other sex in the classroom).

4. Distribution of answer sheets. Tell the students not to write any information on the answer sheet until you have given them further instructions. Then distribute one answer sheet to each student. (Either side can be used; both sides are identical.)

5. Reading Instructions. Inform the students that the white and green forms are somewhat different and that the instructions are slightly different. Ask them to read the instructions to themselves as you read them aloud. Then read the instructions on form 1170-1 (white form). (These instructions are identical to those on form 1170-151, except for the last statement on form 1170-151.)

6. Green Form. Advise those students completing the green form that there is one additional sentence on their instruction sheet which tells them to begin with number 151 on the answer sheet.

7. Upon completion. It takes approximately 30 minutes to complete the Index. When the student has completed the Index, collect the Index, the answer sheet, and the pencil if you have given him one.

8. Answer sheets. The answer sheets for each classroom must be kept together. Use an envelope or folder for each classroom and label the envelope or folder with the name of the classroom (10th grade English, for example).

Thank you for your cooperation.

(If more than one class period is required to complete the Index, have the students pencil their names on the answer sheets so that the sheets can be returned to the same student. To avoid the possibility of loss, the answer sheets should be kept in the room.)

Appendix D

Composition of Samples

Different samples were used for each of the three forms of the Classroom Environment Index. Most of the schools were in upstate New York secondary schools. The classrooms for Form 1069 were mainly from a village school district of approximately 2500 students and a small private co-educational college. The sample for Form 1069 consisted of 553 students in 27 classrooms. The classrooms are as follows:

001 Elementary 5th Grade
002 Math 6th Grade
003 Social Studies 7
004 Social Studies 8
005 Science 7
006 Science 8
007 English 10
008 English 11
009 English 11A
010 English 12
011 Science 9
012 Science 9A
013 High School Biology
014 High School Physics
015 Social Studies 9
016 Social Studies 9A
017 Social Studies 10
018 Social Studies 12
019 College Introductory Psychology
020 College Biology
021 College Education
022 College Freshman Literature
023 College Modern Literature
024 College Economics
025 Graduate Education
026 Mathematics 12
027 Graduate Education

The classrooms of Form 570 were from two enlarged village school districts of approximately 2500 pupils each. There were 179 cases in the following eight classrooms:

028 Social Studies 9
029 Social Studies 10
030 Social Studies 11
031 English 9
032 English 9A
033 English 10
034 Math 8
035 Math 11

Form 1170 included a wider variety of schools; several in small New York State school districts, several from a large city high school in Nebraska, and a few college classrooms from large Universities in upstate New York and in New Jersey. The sample for Form 1170 consisted of students in 31 classrooms. Because the instrument was divided into two halves there was a different number of cases for each half. Form 1170-1 (first 15 scales) consisted of 477 cases. Form 1170-151 (scales 16 - 30) consisted of 462 cases. In some classrooms each student completed both halves of 1170. In others, half of the students completed one form and the other half completed the second form, distributed as evenly as possible by sex. The classrooms are as follows (the fact that some of the serial numbers are missing is due to their elimination because of the extremely small number of cases):

036	Social Studies 10A
037	Social Studies 10B
038	Social Studies 10C
039	Social Studies 10D
040	Social Studies 10E
041	Social Studies 10F
042	Social Studies 10G
043	Social Studies 10H
044	Social Studies 10I
045	Social Studies 10J
051	Social Studies 10P
052	Math 10A
053	Math 10B
056	Math 10E
058	Math 10G
060	Math 10I
065	Homemaking E
068	Industrial Arts C
071	Social Studies 7A
072	Social Studies 8A
073	Graduate Education A
074	Graduate Education B
075	Social Studies 9
076	Social Studies 11
077	English 12A
078	English 12B
079	English 12C
080	College Business Adm. A
081	College Business Adm. B
082	College Business Adm. C
083	English 9

Appendix E

Coding Format for Form 1170
of the Classroom Environment Index

Information regarding the classroom was coded on the standard answer sheet for Stern Personality and Environment Indexes in the section ordinarily used for social security number and age. An eleven-digit code was used as follows:

Space 1, 2, 3	Classroom serial number
Space 4, 5	Subject
Space 6, 7	School
Space 8, 9	Grade
Space 10	Sex
Space 11	Form

1	2	3	4	5	6	7	8	9	10	11
Classroom Serial Number			Subject		School		Grade		Sex	Form

Classroom serial number

A three-digit code was used in the first three spaces to identify each classroom, starting with 001 through 083 in the present study.

Subject

The following two-digit subject code was used in spaces 4 and 5:

01	Art	15	Music
02	Biology	16	Philosophy
03	Business	17	Physics
04	Chemistry	18	Political science
05	Economics	19	Psychology
06	Education	20	Religion
07	Engineering	21	Social studies
08	English	22	Sociology
09	Foreign language	23	Speech and drama
10	General science	24	Afro-American studies
11	Geology	25	Elementary classroom
12	History	26	Secondary School methods of teaching
13	Mathematics	27	Homemaking
14	Military science	28	Industrial arts

Coding for school

The following two-digit codes were used in spaces 6 and 7 to

identify the school in which the classroom was located:

10 Alfred University
11 E. Rochester High (N. Y.)
12 E. Rochester Junior High (N.Y.)
13 Syracuse University
14 State University College at New Paltz (N. Y.)
15 None of these
16 Alfred-Almond Central School (N. Y.)
17 Bath (N. Y.)
18 Wellsville (N. Y.)
19 Agawam (Mass.)
20 Dansville (N. Y.)
21 Jasper (N. Y.)
22 Hornell (N.Y.)
23 Lincoln East High (Nebraska)
24 Scio (N. Y.)
25 Rutgers University

Grade

Grades were coded in spaces 8 and 9 as follows:

00 Kindergarten
01 First Grade
02 Second
03 Third
04 Fourth
05 Fifth
06 Sixth
07 Seventh
08 Eighth
09 Ninth
10 Tenth
11 Eleventh
12 Twelfth
13 College Freshman
14 College Sophomore
15 College Junior
16 College Senior
17 College Graduate Student
18 Professional School (Law, medicine)

Sex

In the 10th space a 1 indicated male, a 2 indicated female.

Form

In the 11th space the form was indicated as follows:

1 Form 1170-1
2 Form 1170-151
3 Both sub-forms completed

Appendix F-1

Simple One-Way Analysis of Variance, CEI Form 1069,
Between Sexes, Grades, Subjects, and Classrooms.

Scale	Sex		Grade		Subject		Classroom	
	F	p	F	p	F	p	F	p
1. ABA	13.41	.001	9.70	.001	8.26	.001	8.88	.001
2. ACH	.31	n.s.	14.00	.001	7.23	.001	7.25	.001
3. ADA	6.82	.01	11.71	.001	5.68	.001	7.10	.001
4. AFF	1.36	n.s.	23.16	.001	8.82	.001	12.21	.001
5. AGG	11.01	.001	4.68	.001	5.49	.001	5.89	.001
6. CHA	.43	n.s.	5.69	.001	5.84	.001	8.79	.001
7. CNJ	13.45	.001	5.57	.001	4.77	.001	4.68	.001
8. CTR	6.66	.01	2.51	.01	2.87	.001	3.08	.001
9. DFR	1.92	n.s.	7.34	.001	3.85	.001	5.87	.001
10. DOM	7.56	.01	11.17	.001	5.82	.001	5.92	.001
11. E/A	.85	n.s.	2.77	.01	4.67	.001	6.20	.001
12. EMO	3.70	n.s.	5.76	.001	5.26	.001	3.20	.001
13. ENY	.01	n.s.	12.77	.001	10.47	.001	8.24	.001
14. EXH	.27	n.s.	20.31	.001	9.14	.001	10.11	.001
15. F/A	.00	n.s.	1.44	n.s.	2.75	.001	1.80	.01
16. HAR	.44	n.s.	42.21	.001	16.12	.001	17.18	.001
17. HUM	.27	n.s.	6.23	.001	7.45	.001	8.69	.001
18. IMP	.45	n.s.	5.78	.001	5.14	.001	5.94	.001
19. NAR	.68	n.s.	30.48	.001	11.95	.001	14.12	.001
20. NUR	.09	n.s.	28.36	.001	14.53	.001	12.66	.001
21. OBJ	19.61	.001	7.85	.001	3.86	.001	5.57	.001
22. ORD	1.32	n.s.	12.73	.001	1.38	n.s.	9.72	.001
23. PLY	2.26	n.s.	16.64	.001	8.14	.001	11.59	.001
24. PRA	1.74	n.s.	2.68	.01	5.23	.001	4.76	.001
25. REF	.02	n.s.	4.87	.001	10.11	.001	6.51	.001
26. SCI	4.53	.05	6.11	.001	20.10	.001	11.57	.001
27. SEN	.62	n.s.	11.23	.001	8.92	.001	8.88	.001
28. SEX	.11	n.s.	5.45	.001	10.98	.001	7.48	.001
29. SUP	.69	n.s.	7.80	.001	4.32	.001	5.71	.001
30. UND	.41	n.s.	6.29	.001	5.53	.001	5.46	.001

Appendix F-2

Simple One-Way Analysis of Variance, CEI Form 570, Between Sexes, Grades, Subjects, and Classrooms.

Scale	Sex		Grade		Subject		Classroom	
	F	p	F	p	F	p	F	p
1. ABA	5.57	.05	28.79	.001	30.10	.001	15.32	.001
2. ACH	.02	n.s.	13.52	.001	3.25	.05	6.72	.001
3. ADA	4.64	.05	5.71	.001	10.30	.001	4.26	.001
4. AFF	7.06	.01	3.69	.05	8.68	.001	3.63	.001
5. AGG	.82	n.s.	22.83	.001	19.51	.001	11.39	.001
6. CHA	.62	n.s.	5.50	.001	4.21	.05	3.06	.01
7. CNJ	6.90	.01	3.60	.05	3.91	.05	2.78	.01
8. CTR	5.48	.05	7.66	.001	14.21	.001	5.98	.001
9. DFR	1.88	n.s.	13.10	.001	6.14	.01	8.11	.001
10. DOM	1.06	n.s.	13.16	.001	6.56	.01	7.17	.001
11. E/A	.10	n.s.	6.80	.001	32.30	.001	14.98	.001
12. EMO	.04	n.s.	4.88	.01	2.48	n.s.	3.20	.01
13. ENY	.06	n.s.	2.03	n.s.	1.91	n.s.	1.15	n.s.
14. EXH	.08	n.s.	6.35	.001	.62	n.s.	7.04	.001
15. F/A	.41	n.s.	1.31	n.s.	1.36	n.s.	1.92	n.s.
16. HAR	2.08	n.s.	17.58	.001	14.08	.001	7.66	.001
17. HUM	1.39	n.s.	5.66	.001	1.78	n.s.	3.84	.001
18. IMP	.02	n.s.	3.88	.01	1.42	n.s.	4.90	.001
19. NAR	.79	n.s.	12.14	.001	.48	n.s.	7.87	.001
20. NUR	7.60	.01	15.77	.001	19.42	.001	9.57	.001
21. OBJ	4.28	.05	13.53	.001	21.87	.001	8.91	.001
22. ORD	.19	n.s.	4.99	.01	1.40	n.s.	3.51	.001
23. PLY	.50	n.s.	.45	n.s.	3.20	.05	3.50	.001
24. PRA	2.20	n.s.	8.58	.001	10.98	.001	5.27	.001
25. REF	2.78	n.s.	3.93	.01	1.55	n.s.	2.31	.05
26. SCI	2.51	n.s.	5.74	.001	1.82	n.s.	3.61	.001
27. SEN	.00	n.s.	9.35	.001	5.00	.01	4.69	.001
28. SEX	3.06	n.s.	4.55	.01	1.30	n.s.	2.93	.01
29. SUP	.14	n.s.	2.36	n.s.	3.41	.05	1.36	n.s.
30. UND	3.03	n.s.	8.34	.001	11.73	.001	5.66	.001

Appendix F-3

Simple One-Way Analysis of Variance, CEI Form 1170, Between Sexes, Grades, Subjects, and Classrooms.

Scale	Sex		Grade		Subject		Classroom	
	F	p	F	p	F	p	F	p
1. ABA	1.71	n.s.	17.44	.001	21.92	.001	11.76	.001
2. ACH	4.05	.05	2.26	.01	6.50	.001	8.12	.001
3. ADA	1.24	n.s.	3.59	.001	6.47	.001	4.33	.001
4. AFF	8.40	.01	3.34	.001	3.15	.01	3.51	.001
5. AGG	1.40	n.s.	?[1]	?[1]	16.68	.001	11.88	.001
6. CHA	.58	n.s.	5.67	.001	5.47	.001	4.73	.001
7. CNJ	3.66	n.s.	7.84	.001	20.23	.001	8.96	.001
8. CTR	2.50	n.s.	?[1]	?[1]	10.55	.001	8.04	.001
9. DFR	.86	n.s.	6.56	.001	10.89	.001	10.11	.001
10. DOM	.32	n.s.	10.18	.001	13.69	.001	6.84	.001
11. E/A	.51	n.s.	4.30	.001	8.99	.001	5.84	.001
12. EMC	4.26	.05	4.33	.001	8.66	.001	4.28	.001
13. ENY	.40	n.s.	2.55	.01	6.17	.001	9.96	.001
14. EXH	11.97	.001	17.02	.001	28.72	.001	9.28	.001
15. F/A	9.56	.01	2.11	.05	2.11	.05	2.03	.001
16. HAR	9.63	.01	3.07	.001	1.47	n.s.	5.17	.001
17. HUM	.33	n.s.	7.91	.001	18.63	.001	10.37	.001
18. IMP	9.49	.01	11.30	.001	24.03	.001	8.41	.001
19. NAR	5.25	.05	8.73	.001	16.13	.001	4.82	.001
20. NUR	3.64	n.s.	13.94	.001	2.11	.05	5.29	.001
21. OBJ	15.08	.001	11.45	.001	10.01	.001	9.26	.001
22. ORD	3.44	n.s.	6.88	.001	16.97	.001	7.54	.001
23. PLY	1.88	n.s.	7.41	.001	11.24	.001	12.84	.001
24. ORA	.15	n.s.	7.43	.001	16.30	.001	6.97	.001
25. REF	1.13	n.s.	11.61	.001	20.02	.001	9.37	.001
26. SCI	3.80	n.s.	1.94	.05	3.50	.01	2.14	.001
27. SEN	4.47	.05	?[1]	?[1]	21.49	.001	14.23	.001
28. SEX	4.57	.05	?[1]	?[1]	11.49	.001	4.00	.001
29. SUP	4.02	.05	4.49	.001	2.05	n.s.	5.10	.001
30. UND	1.85	n.s.	6.31	.001	8.57	.001	7.83	.001

[1]Data not available.

Appendix G

Item Discrimination Indexes for CEI Form 1170

	Scale									
Item	1	2	3	4	5	6	7	8	9	10
1	43	36	47	32	60	31	57	51	58	50
2	60	71	35	53	60	34	66	45	78	72
3	45	64	49	48	54	26	69	53	05	60
4	55	63	25	55	55	46	51	36	72	73
5	48	58	50	65	50	69	45	52	58	67
6	57	53	56	36	60	34	67	59	53	48
7	23	63	65	40	63	46	77	68	65	57
8	60	67	50	43	32	49	57	70	54	67
9	70	57	41	38	45	64	44	36	69	64
10	55	33	50	69	52	47	64	59	35	69
Mean	52	57	47	48	53	45	60	53	55	63

	Scale									
Item	11	12	13	14	15	16	17	18	19	20
1	62	38	64	49	39	10	60	38	31	49
2	60	52	67	59	36	54	36	66	52	40
3	56	57	64	69	26	19	50	64	65	62
4	53	33	41	12	38	31	64	26	43	57
5	56	36	40	64	53	37	64	58	18	29
6	75	36	63	22	28	49	62	63	37	64
7	64	34	61	24	21	56	62	18	44	57
8	57	48	74	67	22	50	66	58	60	54
9	71	31	69	41	29	58	48	54	31	64
10	53	40	40	43	43	60	56	52	42	70
Mean	61	41	58	45	34	42	57	50	42	55

	Scale									
Item	21	22	23	24	25	26	27	28	29	30
1	42	70	72	74	72	18	39	49	50	48
2	26	70	55	70	49	60	56	53	42	51
3	75	48	43	70	62	50	67	32	46	46
4	67	59	44	34	74	47	62	38	-01	66
5	54	55	68	74	60	33	38	50	62	31
6	41	54	83	64	58	27	46	42	74	51
7	43	36	52	63	43	26	66	59	75	31
8	54	54	82	63	66	34	53	70	30	78
9	43	27	37	62	24	47	15	46	53	61
10	46	66	72	42	70	49	55	56	02	73
Mean	49	54	61	62	58	39	50	50	43	54